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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,216	09/24/2003	Yasuhiro Yoneda	1422-0603P	1568

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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,216

Applicant(s)

YONEDA ET AL.

Examiner

Michael A. Marcheschi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/23/05 has been entered.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 020 501 alone or in view of Liu et al. and/or Ina et al.

The EP reference teaches in sections [0047]-[0057], a polishing slurry for a substrate comprising a combination of inorganic particles (silica, etc.) and polymer particles. The polymer particles and inorganic particles have a size of at least 0.01 um and the inorganic particles are smaller than the polymer particles. The ratio of the mean particle size of the polymer particles to the mean particle size of the inorganic particles is 0.01-0.95. The content of both particles is also defined.

Liu et al. teach in column 6, lines 62+ beneficial reasons to use colloidal abrasives.

Ina et al. teach in column 8, lines 54+ beneficial reasons to use colloidal abrasives.

The reference teaches a polishing slurry (bi-modal) which reads on the instant claims in view of the teaching of the individual particle sizes and the ratio of the mean particle size of the polymer particles to the mean particle size of the inorganic particles. In view of this, the claimed formula and therefore subject matter of claims 1, 2, 4, and 7-8 would have been obvious to one

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having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976). With respect to the colloidal aspect (use of colloidal silica), the reference teaches the use of silica that can have a colloidal size, thus making colloidal silica obvious, although not literally defined. In other words, one skilled in the art from interpreting the size of the silica particle would know that this size corresponds to colloidal silica. In addition, it is the examiners position that the recitation of “silica” in general encompasses colloidal silica because **Aa generic disclosure renders a claimed species prima facie obvious.** *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971). In the alternative, the use of colloidal silica would have been obvious because both secondary references teach beneficial reasons to use this material, thus one skilled in the art would have found it obvious to use this silica form in view of the beneficial reasons defined by the secondary references. With respect to the limitation of claim 3, it is the examiners position that the polymers defined by this reference will have the claimed glass transition temperature absent evidence to the contrary. With respect to the limitations of claim 5, since the particles are independent of one another, they must have the same zeta sign. With respect to the limitation of claim 6, the reference defines amounts for the inorganic and organic particles and although a ratio is not specifically defined, the claimed ratio is broadly encompassed by the reference defining a mixture. Finally, in the above rejection, the desired

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particle size is a function of the application and mere recitation of that size does not represent a patentable distinction to one of ordinary skill in the art, lacking evidence to the contrary.

Claims 1-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 036 836 alone or in view of Liu et al. and/or Ina et al.

The EP reference teaches in sections [0038]-[0065], a polishing slurry for a substrate comprising a combination of inorganic particles (silica, etc.) and polymer particles. The polymer particles and inorganic particles have a size of 0.01 to 1 micron. The ratio of the mean particle size of the polymer particles to the mean particle size of the inorganic particles is also defined (can be 1). The content of both particles is also defined as a ratio.

The reference teaches a polishing slurry (bi-modal) which reads on the instant claims in view of the teaching of the individual particle sizes and the ratio of the mean particle size of the polymer particles to the mean particle size of the inorganic particles. In view of this, the claimed formula and therefore subject matter of claims 1, 2, 4, and 6-8 would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976). With respect to the colloidal aspect (use of colloidal silica), the reference teaches the use of silica that can have a colloidal size, thus making colloidal silica obvious, although not literally defined. In other words, one skilled in the art from interpreting the size of the silica particle would know that this size corresponds to colloidal silica. In the alternative, the use of colloidal silica would have been obvious because both

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secondary references teach beneficial reasons to use this material, thus one skilled in the art would have found it obvious to use this silica form in view of the beneficial reasons defined by the secondary references. With respect to the limitation of claim 3, it is the examiners position that the polymers defined by this reference will have the claimed glass transition temperature absent evidence to the contrary.

Applicant's arguments filed 3/23/05 have been fully considered but they are not persuasive.

Applicants argue that EP (501) does not teach the claimed invention in view of the results shown in table 3 (page 30), figure 2 and on page 31, lines 1-16 because (A) these results show improved polishing rates as compared to composition not containing organic particles and (B) if the particle size of the polymer exceeds $D_i + 50$, the polishing rate remains substantially at the same level or is lowered. This is not persuasive because (1) the EP reference above definitely contains polymer particles, thus any comparative evidence without the use of polymer particles, as defined in part (A) above is inconsistent with the reference and (2) applicants admit that the polishing rate is substantially the same, see part (B). If the polishing rate is the same, how can this establish unexpected results (i.e. the results are substantially the same). Applicants also argue the use of colloidal silica. The examiner is well aware of the difference between fumed silica and colloidal silica. Applicants argument is based on the fact that fumed silica is used in the example but as is well known **"A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments"** See *In re Van Marter*, 144 USPQ 421. In the alternative, the use of colloidal silica is obvious because colloidal silica is

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smaller in size thus it is expected and within the level of ordinary skill in the art that smaller sized particles will produce less scratched.. This is clearly implied by the two secondary reference which clearly define beneficial reasons for using colloidal particles. Finally, applicants appear to argue the size ratio in that the mean size of the polymer can exceed the mean size of the inorganic particles. The examiner is unclear as to this argument because the claimed size limitations are clearly disclosed and this limitation is not claimed. Finally, to comment on the results shown in table 3 and figure 2, these results are not a comparison of the prior art used in the above rejections. As can be seen, the comparative examples define inorganic particles used in conjunction with polymer particles, wherein the particle size and organic particle size is outside the scope of the reference (i.e. the sizes do not meet the sizes of at least claim 8 of the reference. Criticality is to be shown by comparing the claimed invention with that of the references. Applicants have not clearly done this and thus the above rejection stands.

With respect to the rejection based on EP (836), this rejection is reapplied in view of applicants cancellation of the zeta potential limitation in claim 1 (the examiner withdrew this reference in view of the zeta potential limitation added to claim 1 in the amendment dated 10/12/04).

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ

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545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

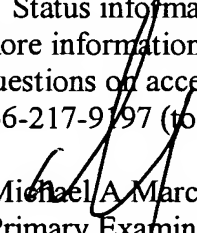
Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356. **The examiner acknowledges the statements made by applicants in the background section (statements referring to the prior art applied), but these statements alone are not sufficient to show patentability.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/4/05
MM


Michael A. Marcheschi
Primary Examiner
Art Unit 1755